PROGRAMMABLE AUTOMOTIVE STARTER SYSTEM WITH A KNOWLEDGE-BASED USER INTERFACE

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ABSTRACT:

During the cold winter months, people generally experience extended idle and unnecessary periods of waiting time for their vehicles to warm up to comfortable and drivable conditions. In response to this problem, a wireless remote starter was developed and introduced into the open market a few years ago. This device allows vehicle operators to remotely start their vehicles at any time but only within a predetermined range as dictated by the control transmitter technology. The limiting condition of being functional only within the proximity of the vehicle is a major drawback of the wireless remote starter device.

This research effort is an attempt to improve on the stated problem by experimenting with an alternative solution approach using a programmable timer system. The methodology requires the integration of three essential components namely: programmable timer, remote starter device, and vehicle control unit. While the programmable timer is directly integrated with the remote starter device, the vehicle control unit is upgraded to be programmable. The resulting programmable timer system for automobiles is, therefore, analogous to the VCR recording of a TV show. Thus, the vehicle control unit can be programmed to turn the engine ON or OFF at a specified future time, just as a VCR can be programmed to START or STOP the recording of a movie. To take this device one step further, a knowledge-based system will be integrated in order to provide a more user-friendly interface. The built-in knowledge-based software program will query the user for detailed information in order to automatically program the unit for the user.

The capability of being able to cause the vehicle engine to start or stop at a specified time offers ample opportunity for many other electronic devices of automobiles in general such as heater, defroster, air conditioner, etc. to be controlled in the same manner through the vehicle control unit. The benefit of this improved system is not limited to the cold winter months when there is the need to turn on the heater and the window defroster after the vehicle has run for some specified period of time, but also in the hot summer months when there is equal need to turn on the air conditioner. Also the intrusion detection circuitry will instantaneously switch the vehicle off and switch to the alarm mode.

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